



CoolPoly® D3612

Celanese Corporation - Polyamide 6

Monday, November 4, 2019

General Information

Product Description

CoolPoly D series of thermally conductive plastics transfers heat, a characteristic previously unavailable in injection molding grade polymers. CoolPoly is lightweight, net-shape moldable and allows design freedom in applications previously restricted to metals and ceramics. The D series is electrically insulative and provides inherent electrical isolation characteristics.

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Electrically Insulating	• Thermally Conductive	
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.62	g/cm ³	ISO 1183
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1.49E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	6960	psi	ISO 527-2/1A/5
Tensile Strain (Break)	0.68	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.49E+6	psi	ISO 178
Flexural Stress (73°F)	11600	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	0.43	ft·lb/in ²	ISO 179/1eA
Charpy Unnotched Impact Strength (73°F)	3.5	ft·lb/in ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	401	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	329	°F	ISO 75-2/A
Specific Heat	0.287	Btu/lb/°F	ASTM E1461
Thermal Conductivity			ASTM E1461
-- 2	9.0	Btu·in/hr/ft ² /°F	
-- 3	26	Btu·in/hr/ft ² /°F	
-- 4	26	Btu·in/hr/ft ² /°F	
Electrical	Nominal Value	Unit	Test Method
Relative Permittivity (1 MHz)	3.60		IEC 60250
Dissipation Factor (1 MHz)	0.014		IEC 60250

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	176	°F
Drying Time	2.0 to 4.0	hr
Rear Temperature	419 to 464	°F
Middle Temperature	437 to 500	°F
Front Temperature	446 to 527	°F

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Injection	Nominal Value	Unit
Nozzle Temperature	428 to 527	°F
Processing (Melt) Temp	464 to 554	°F
Mold Temperature	176 to 203	°F
Injection Rate	Moderate-Fast	
Back Pressure	< 50.8	psi

Injection Notes

Zone4 temperature: 235 to 290°C

Notes

¹ Typical properties: these are not to be construed as specifications.

² Thruplane

³ Crossflow

⁴ Flow